



UNITED STATES PATENT AND TRADEMARK OFFICE

MN

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/489,652	01/24/2000	William G. Burroughs	KUC-718US	6089
46900 7590 07/31/2007 MENDELSON & ASSOCIATES, P.C. 1500 JOHN F. KENNEDY BLVD., SUITE 405 PHILADELPHIA, PA 19102			EXAMINER TANG, KENNETH	
			ART UNIT 2195	PAPER NUMBER
			MAIL DATE 07/31/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/489,652

Applicant(s)

BURROUGHS ET AL.

Examiner

Kenneth Tang

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27, 29-38 and 40-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 53-58 is/are allowed.
- 6) ☒ Claim(s) 27, 29-31, 34-38, 40-42, and 45-52 is/are rejected.
- 7) ☐ Claim(s) 32, 33, 43 and 44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: <u>7/20/07</u> |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the Remarks filed on 7/16/07. Applicant's arguments have been fully considered but are moot in view of the new grounds of rejections.
2. Claims 27, 29-38, and 40-58 are presented for Examination.

Allowable Subject Matter

3. Claims 32-33 and 43-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
4. Claims 53-58 are allowed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 27, 29-30, 34, 36-38, 40-42, 45, 47-51 are rejected under 35 U.S.C. 102(e) as being anticipated by Lindberg et al. (hereinafter Lindberg) (US 6,457,140).**
6. As to claim 27, Lindberg teaches in a system comprising a first processor and one or

Art Unit: 2195

more other processors, a method for applying one or more interrupt signals to the one or more other processors, the method comprising:

(a) generating, in the first processor (Fig. 4, 102, etc.), a data word having two or more data bits (stream of data), wherein each data bit has either a first bit or a second bit value;

(b) transmitting the data word from a data port of the first processor (serial stream of data) to a signal unit (DEMUX 130) external to the first processor and the one or more other processors (Fig. 4, 102, 128, 140, etc.);

(c) converting, in the signal unit, the data word into two or more interrupt signals by analyzing the bit value of each of two or more data bits in the data word, wherein each analyzed data bit in the data word having a specified bit value corresponds to a different interrupt signal (converting serial data stream into parallel data control signals) (col. 7, lines 22-29 and 64-67; col. 8, lines 1-5, etc.) ; and

(d) transmitting each interrupt signal from the signal unit to an interrupt port of an other processor (Fig. 4, 102, 128, 140, etc.).

7. As to claim 29, Lindberg teaches wherein at least two interrupt signals are transmitted to two different ports of a single other processor (from serial on 102 to parallel on 140) (see Fig. 4, etc.).

8. As to claim 30, Lindberg teaches wherein at least two interrupt signals are transmitted to interrupt ports of at least two different other processors (from serial on 102 to parallel on 140 and 150) (see Fig. 4, etc.).

Art Unit: 2195

9. As to claim 34, Lindberg teaches wherein each interrupt signal is transmitted from the signal unit to a corresponding interrupt port of a corresponding other processor via a dedicated line (from serial on 102 to parallel on 140) (see Fig. 4, etc.).

10. As to claim 36, it is rejected for the same reason as stated in the rejection of claim 27.

Lindberg teaches two-way communication between the processors (col. 6, lines 27-28).

11. As to claim 37, Lindberg teaches wherein at least one other interrupt signal is transmitted from the other signal unit (DEMUX 130, Fig. 4) to an interrupt port of at least one other processor (col. 6, lines 27-28, see Fig. 4).

12. As to claims 38, 40-42 and 45, 47-48, they are rejected for the same reasons as stated in the rejections of claims 27, 29-31 and 34, 36-37.

13. As to claims 49-50, they are rejected for the same reasons as stated in the rejections of claims 1 and 35.

14. As to claim 51, it is rejected for the same reasons as stated in the rejection of claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 31 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindberg et al. (hereinafter Lindberg) (US 6,457,140) in view of Tyrell et al. (hereinafter Tyrell) (US 5,185,736).

16. As to claim 31, Lindberg is silent in teaching wherein the signal unit detects a transition in each data bit of the data word over time to determine when to generate a corresponding interrupt signal. However, Tyrell teaches converting a data word (serial bit stream) to a plurality of control signals (8-bit parallel set of signals) (col. 85, lines 8-9, col. 74, lines 49-51). Tyrell also teaches the interrupt control signals can be triggered using edge detection (detecting transitions) (col. 122, lines 20-27, col. 180, lines 15-21, etc.). Lindberg and Tyrell are in the same field of endeavor of a transmission system that involves communication and conversion of a data word to a plurality of control signals in a parallel. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include edge detection with Lindberg's invention. The suggestion/motivation for doing so would have been so that Lindberg's system would know when to generate its control signals (col. 122, lines 20-27, col. 180, lines 15-21, etc.).

17. As to claim 52, it is rejected for the same reasons as shown in the rejections of claims 27, 34-35 and 38 (see reference citations in all of these claim rejections). In addition, Lindberg is silent in teaching detecting a transition in each data bit of the data signal over time to determine when to generate a corresponding interrupt signal. However, Tyrell teaches converting a data word (serial bit stream) to a plurality of control signals (8-bit parallel set of signals) (col. 85, lines 8-9, col. 74, lines 49-51). Tyrell also teaches the interrupt control signals can be triggered using edge detection (detecting transitions) (col. 122, lines 20-27, col. 180, lines 15-21, etc.). Lindberg and Tyrell are in the same field of endeavor of a transmission system that involves communication and conversion of a data word to a plurality of control signals in a parallel. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include edge detection with Lindberg's invention. The suggestion/motivation for doing so would have been so that Lindberg's system would know when to generate its control signals (col. 122, lines 20-27, col. 180, lines 15-21, etc.).

18. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lindberg et al. (hereinafter Lindberg) (US 6,457,140) in view of Russell (US 6,856,600 B1).

19. As to claim 35, Lindberg is silent in teaching wherein the data word is transmitted from the first processor to the signal unit via a shared data bus. However, Russell teaches an all-purpose bus (Fig. 16, 1630) along with a bus bridge (1640) that allows for communications

Art Unit: 2195

between the processor and other devices (col. 11, lines 60-67, col. 19, lines 60-67). Lindberg and Russell are both in the same field of endeavor of a network switching computer system. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Lindberg's invention so that its data bus could be shared like Russell's all-purpose bus. The suggestion/motivation for doing so would have been to allow the processor to have communication with memory (or other devices) so that data words from the memory, for example, could be used in the communication to the other processor (col. 11, lines 60-67, col. 19, lines 60-67). Therefore, it would have been obvious to combine Russell with Lindberg to obtain the invention as specified in claim 35.

Response to Arguments

20. Applicant's arguments have been fully considered but are moot in view of the new grounds of rejections.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- **US 6,219,417 B1** teaches a signal unit (Decimator 804) that takes in a serial data stream (data word) and provides a 10 bit parallel output signal (col. 9, lines 62-67).

Art Unit: 2195

22. Applicant's amendment on 2/22/07 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2195

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kt

5/10/07


MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100